

ABSTRACT OF THE DISCLOSURE

INS. A1

A technique for reliably performing long operations in a reliable system, that assures reliability notwithstanding continuous existence of intermediate states for long operations, to make them deterministic and atomic. The file system includes (1) a separate "zombie" filespace reserved for files having long operations in progress; (2) a file deletion manager that determines, before deleting any file, whether it is necessary to first move the file to the zombie filespace; (3) a zombie file deletion manager that performs portions of the file deletion operation on zombie files in atomic units; (4) a file truncation manager that determines, before truncating any file, whether it is necessary to create a complementary file called an "evil twin" (the truncation manager moves all blocks to be truncated from the file to the evil twin), (5) a zombie file truncation manager that truncates portions of the file in atomic units.